

## ABSTRACT

An improved method and immunopharmacological composition for upregulating the expression of the co-stimulatory molecule B7 is provided. A  $\beta$  1,3-glucan-containing composition is provided that can upregulate the cell surface expression of B7 molecules on antigen presenting cells like macrophages, thereby allowing these antigen presenting cells to more effectively initiate adaptive immune responses to foreign antigens like pathogenic microorganisms and tumors.

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